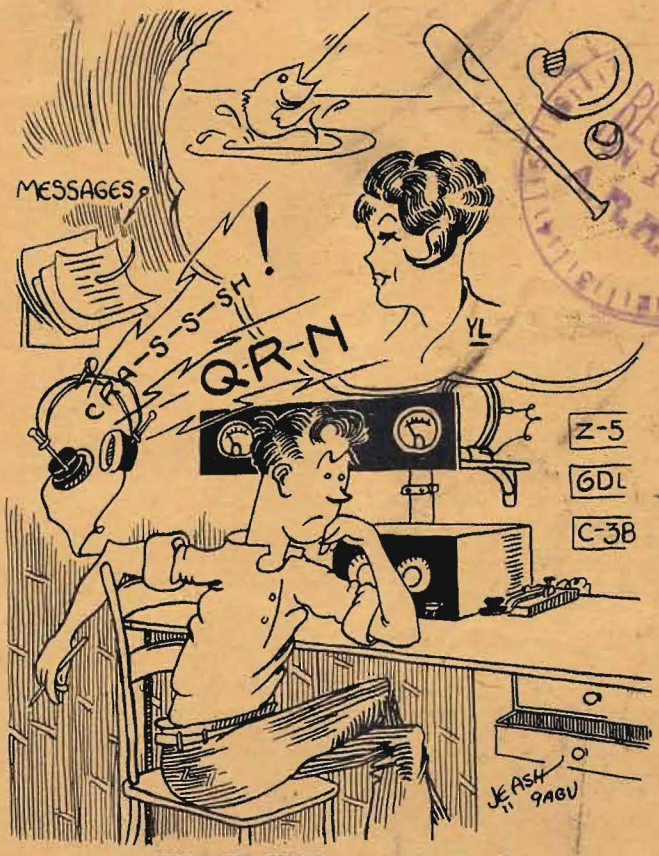
BADGER ARRL NEWS

Published by the MRAC



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A.R.R.L.

JUNE 1926

Don't Forget The Big
BADGER HAM ROUNDUP

Auspice's Of

The Milwuakee Radio Amateurs' Club

Saturday June 12th **Milwaukee Wis.**

BADGER A R R L NEWS
June 1926

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NOTICE !!!

The July and August numbers will be combined into one BIG issue, which will also contain the yearly Resume' of the Club and other big features.

Only members in good standing will receive copies hensforth. Now is the time to pay up your dues,or join,if you are not yet a member.

Badger A R R L News

(Founded by 9VD)

Published monthly by

The Milwaukee Radio Amateurs' Club, Inc.

Volume 1 JUNE 1926 Number 4

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The club meets every Thursday at 8:00 P.M. except from June 17 to Aug. 12, in the Trustees Room of the Public Museum.
All those interested in radio are cordially invited to attend our meetings.

Editorials

Tourists Free Message Service

About a year ago we inaugurated what was known as the "Tourists Free Message Service". All during the last summer this service was kept going and a total of about 300 messages were handled from Milwaukee alone.

At that time we thought it would be a good idea to try and have this service spread thru-out the country, and in spots it did work fairly well, but with the right kind of publicity it would have spread still more.

During the last touring season we received many comments and letters of thanks on this service which shows that the service was appreciated.

Now the question arises, are we going to continue with this service and build it up all over the country, or we going to forget all about it and pass up this opportunity of showing the general public what service we really render free of charge.

I believe that we should never miss an opportunity to give the G. P. our services, for it will build up good will which may some time come in handy. It will also build up our traffic totals for the summer, keep us in touch with the gang, tend to keep our schedules going and in that way improve matters considerably which otherwise would have lain dormant during the summer.

Headquarters expressed themselves very favorably toward this idea and we thought that something would appear in "QST" to give it wider publicity, but we guess that in the rush of things it was overlooked, but there is still time to give this plan wide publicity and with the various nets, such as the Army, Navy and R. R. nets now organized the percentage of delivery and quick QSR should be greatly increased.

Here is a chance to turn our usual summer inactivity into an outstanding achievement for the amateur fraternity and add another feather onto our hat, which, if this thing of adding feathers to our hat keeps up, will make us look like an Indian Chief on the war-path. HI!!!

Re: Radio Message Check

On page 39, in May QST, there appears an article by Mr. F. E. Handy Communications Manager, on how to check messages. After citing how morse and cable messages are checked Mr. Handy informs us that A R R L message checking practise has been changed to a different system. This system is to long to repeat in detail here. It would take a Philadelphia lawyer to figure it out and we venture to gamble a few sheckles that his

check would be wrong. Mr. Handy says that ever increasing numbers are taking up radio as a profession and that we may as well start out right by using this method.

I disagree with him in so far that this system now inaugurated is not sound. It is cumbersome, confusing and will cause much time to be wasted in the transmission of messages. We must also remember that there are new hams starting into this old game of ours who don't know the first thing about land line or cable count, and to try and make them use this method would add to the confusion. My idea of a check is to make it as simple as possible, the land line check comes nearest to being a simple check.

If you were to listen in on messages being sent by amateurs you would hear less than two percent of them using any check whatever, then to suddenly impose upon the amateurs this new method without any warning handicaps it greatly and I venture to predict that it will be a failure and that its doom is already sealed.

Most of the amateurs are in this game for the fun and entertainment they get out of it. You cannot drive them to anything and if you expect them to sit down and count the letters in the words and use a different count for the address, text and coded messages, you are expecting to much.

I wonder just how long it would take two good operators, well versed in this new procedure to send ten messages? I venture to make a good healthy guess that it will take them an hour or more, these same operators using the old method would perhaps use 15 minutes. Why, if our messages are sent free should we use such an elaborate word checking system? What does it matter whether the msg is in code in plain English, French or German? A word is a word, whether it is 20 letters long or 10 or 2 letters long does not make any difference, as long as it is in a single group seperated by a space let that count as one word.

We have been urged continually to speed up our message handling, we have practically eliminated, unless absolutely necessary the double sending, but to add this new checking system would be like going back to the age of horses and carriages for transportation.

This system simply cannot be made to function among so varied a group of men and boys not to forget the Yl's and OW's, and to expect one to stop and explain it to them would be like trying to explain the intricacies of radio and an entire evening could very nicely be spend trying to explain this checking system to one ham, which would of course spoil the entire evening for other usefull radio work.

Can you visualize a good speedy operator, trying to make a new brother ham understand the intricacies of this new system over the air? Mr. Kruse has often refered to the times when technical editors sit at their desks, tearing out their hair by the handfull, this would be a mild pastime compared to what a ham would be driven to, trying to explain that coded words count five letters to the

word, but that in plain English you must count 15 letters to the word and that a word with 16 letters in it counts as two words, and that if you use the term New York City in the in the address it counts as one word, but in the text it counts as three. Ye gods, can you see a couple of good conscientious operators disputing a check? Oh where will our message totals go to, when it will take you all evening to send one message of mixed words such as straight English, plain code and cipher code, then after you have carefully counted your check and sent the message the receiving op would come back at you, please explain check; more and more handsfull of hair, and about midnight, a youth, whose flaming crown of glory was the pride of his YL, would be transformed into an old baldheaded man.

NO! Honorable Board of Directors, you may mean well and may be trying to improve message handling, but this system will never work, so for the benifit of those who are yet to try this new checking method, I beseach you; abolish it at once, or the untold agony of the hams will prey upon your conscience.

F.C.

Hamateur News

Holland amateurs will again be allowed to transmitt. This privilege to transmit has been definitely granted. The dope on wavelengths, power and time will be announced later. This sure is good news.

.---.

Radio contact with all expeditions has been good. KFZH's messages from the Wilkins Artic Expedition come thru without any break. 7GZ and 7SM at Nenana, Alaska have been QSO regularly. Any traffic for the expedition or to the interior of Alaska should be routed thru u6HJ who keeps a daily schedule with 7SM. Waskeys little battery operated outfit was copied direct by oA6O at Hendrena, South Africa on April 2nd.

-...-

KEGK signals are reported QSA all over the U S A. He was heard discussing prohibition with 9ZA, explaining that there was no prohibition at Spitzenberg. but that if anyone wanted to drink a bottle of beer up there they would first have to thaw it out. HI!

.---.

About June 15th, look out for the Schooner Morrissey of the Putnam Expedition on 33 meters. The call letters are still unknown but will be announced later. As the schooner gets north, 20 meters will be used. Amateurs should QSR official messages to G.P. Putam's Sons, 2 West 45th St., NYC. Personal traffic will be in plain English and handled with as many stations as possible. If you are lucky enuf to get some, push it on by QSR, always sending confirmation copy by mail.

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(Continued on Page 14.)

A Readily Constructed Impedance Coupled Amplifier

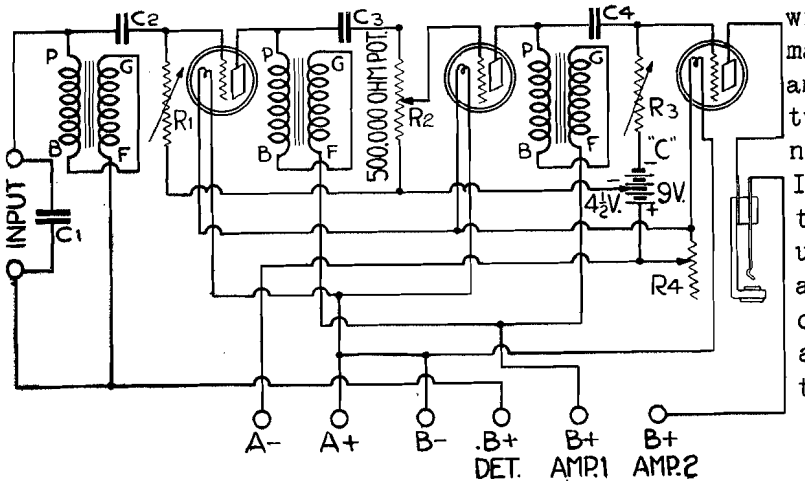
By L. S. Hillegas-Baird*

A scheme to readily convert a standard transformer amplifier to choke coupling, utilising old parts, has been called to the attention of the News and described as follows: From the accompanying diagram it will be seen that the usual two transformers and an additional one have their primaries and secondaries connected in series, forming three chokes. It is entirely possible to use the secondaries alone in case three transformers with their primaries burned out are available.[1] Tapping the coil as is done with commercial auto transformers is not essential for good results and because of the difficulty it is not recommended that an attempt be made to cut into the windings.

The by-pass condenser C1 has a capacity of .001 mfd. C2 and C3 are not critical in capacity. They may be from 0.1 to 1 mfd. but C4 must be kept small, say from .001 to .00025 mfd. as a larger one, although it makes for more volume, will tend to block. The three grid resistances are each 500,000 ohms.

To control volume the center grid resistance should be variable. The non-inductive 500,000 ohm Modulator made by the Central Radio Laboratories is recommended. Resistance control is preferable because the surges of current caused when the jack circuits are opened and closed are a source of danger to the choke windings. These currents frequently cause burn-outs in transformers and chokes.

By using this plan, a satisfactory impedence amplifier will prove doth simple and inexpensive to build. The three stages of impedence coupled (using 201A tudes) will have approximate ly the same amplification as two stages of transformer stages. If the new "Hi-mu" type of tubes are used, there will be a substancial increase in volume as well asimproved tone quality.



([1]It is advisable to use transformers with both windings intact since a burned winding may have a shorted turn. Tech. Ed.)

*9HO-9OV Assoc. I.R.E., Past Pres. MRAC.

Crystal Control

By Ben Chromy (Technical Editor)

The advantages of crystal control of the c w transmitter are covered in two general headings; first, the frequency is constant and second, the note is pure d.c. The antenna may swing, the voltage regulation of the plate supply may be poor, the tubes, inductances and chokes may get hot but still the frequency remains constant. The chirpy note, so characteristic of self excited circuits, the variation in the note caused by generator speed variation and extramely rough note of the unfiltered r.a.c. is avoided.

The operation of the quartz crystal oscillator is rather peculiar in that the crystal actually vibrates mechanically at same frequency at which it oscillates electrically. The knowledge of this fundamental fact gives the reason why a crystal should not be overloaded, since overloading will cause the crystal to vibrate to such an amplitude mechanically that it ultimately cracks or becomes "tired" and quits.

The crystal control may be used in either the partially self excited circuit or the separatly excited circuit. The partially self excited circuit is the one most used, since the grade of crystals within reach of most amateurs will not oscillate without some coaxing. Regeneration as indicated by inductance L1 Fig. 3B, is employed as a means of coaxing. The crystal should by all means be tried first without regeneration, by omiting L1, since it may oscillate without assistance; this is especially important where very thin crystals are used, since they are more fragile and over-oscillation may fracture them.

The ordinary amateur should not try to grind his own crystal below 75 meters oscillation period or $\frac{3}{4}$ millimeter thickness, since 40 meter operation may be obtained from the large family of harmonics of the crystal very readily by simply tuning the plate L C circuit as explained in a later paragraph.

Before attempting to make a high power transmitter work, the tricks of a lone five watter must be mastered. The five watt tube must not be overloaded and the maximum plate voltage should not exceed 325 volts. The equiptment is connected as shown in figure. 3B. A thermo-ammeter of 0-2 amperes may be used as A1, although a larger range ammeter may be used depending on the resistance of the L2 C circuit. The L2 C is tuned to the frequency

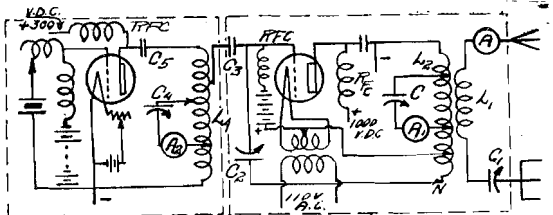


FIG. 3A

of the crystal or some harmonic thereof after the power is applied to tube and thermo-ammeter A1 is watched. When the circuit is in oscillation the ammeter A1, will show some deflection. The deflection should be sharp, that is, a slight movement of the condenser dial should change the reading of the meter a great deal. If the change of the capacity C does not show a sharp change in the ammeter reading, then the circuit is in oscillation without crystal control. The size of the grid choke must then be altered. It is best to have the antenna coupled to the plate coil in adjusting the crystal oscillator, because excessive currents in the tuned plate circuit will be avoided and the chance of burning out A1 will be lessoned. This precaution is not necessary when a 0-4 ampere meter is used as A1. If the oscillator is to be operated at 40 meters and the crystal fundamental is 80 meters, then the circuit L2C is tuned to 40 meters which is a harmonic of the crystal and the same procedure is followed as if the 80 meter band were used.

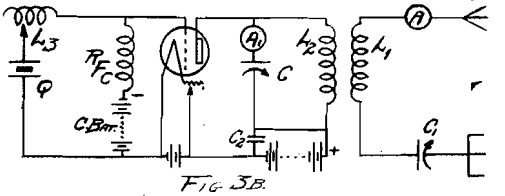


FIG. 3B.

CONSTANTS FIG 3B
L_2 - 9 TURN, 3.5" DIA. RIBBON FLAT WOUND. L_1 - 4 TURN SAME L_3 - 8 TURN, 1.5" DIA. No. 20 DCC. No. TURNS VARIES. C - 0.0005 μf. C_1 - 0.0005 μf. C_2 - 0.002 μf. "C" BAT. 2.5 VOLT.

CONSTANTS FIG 3A.
L_4 SAME AS L_1. L_1 L_2 C C_1 "C" BAT A, A SAME AS CORRESPONDING INSTRUMENTS IN FIG 3B. C_2 - 75 μμf. (ABOUT 9 PLATE DOUBLE SPACED). C_3 - 0.002 μf. MICA. "C" BAT. - 75 VOLTS RFC - EACH 100 TURNS ½" DIA.

Crystal control becomes more complicated when high power is used. Amplifier are then essential and prevention of oscillation (in the amplifier) is then encountered. There is one advantage in operating a crystal from its harmonic because the liability of oscillation in the frequency changing amplifier is nil. It might be a good idea to use a crystal of 160 meters fundamental to operate at 80 meters by using a harmonic. Neutralizing condensers are used to prevent oscillation. Shielding and spacing the amplifier will also help to eliminate oscillation in the amplifier.

In starting the amplifier and crystal oscillator the crystal controlled tube is made to function first. A fraction of the normal plate voltage (about 500 volts) is applied to the amplifier. The antenna coil should be coupled to the plate coi of the amplifier, as the capacity C1, Fig. 3A is varied. The thermo-ammeter A1, Fig. 3A will show a slight deflection as the frequency of the oscillator is approached. The taps, N and capacity, C2 of Fig. 3A are then adjusted until a point is found where minimum change in plate mils of the oscillator occurs when C2 is slightly varied. The amplifier is then practically neutralized.

A point where it is completely neutralized may be obtained if shields are used as shown by the broken lines in Fig. 3A. These shields must be grounded. The oscillator should also be spaced by several feet distance from the amplifier.

A very good scheme of determining if the amplifier is neutralized, is to put a sensitive current indicator into the L2C circuit Fig. 3A in place of A1. This sensitive indicating device is very simple and cheap. Connect a UV199 tube as shown in Fig. 3. No socket is used and points AB, the filament prongs on the base are soldered into position in place of A1, Fig. 3A. The filament current of the UV199 is adjusted until a further increase in current will quite materially change the plate M.A. reading. The plate M.A. should be an 0 to 5 or 10 M.A. meter. The RFC consists of about 100 to 150 turns of No. 24 DCC wire 1¼ inch in diameter. The length of the leads to the grid and filament chokes is immaterial. The only leads that must be short are the leads soldered to AB in order to keep the inductance of the L2C circuit practically the same as when A1 is used.

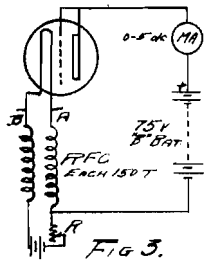


Fig 3.

Now to determine if the amplifier is neutralized. Start the oscillator but leave all power off of amplifier. Leave L2C Fig. 3A the same as adjusted when partially neutralized when only a small fraction of normal plate voltage was on the amplifier. Then vary condenser C2 and tap N until the plate MA of the current indicator shows no change and consequently no current flow in the L2C circuit. It must be remembered that if our sensitive curret indicator which is easily assembled from parts around the shack, were not used, a high priced instrument would have to be substituted.

Seperate plate power must be used on the crystal oscillator and amplifier. Seperate filament power is also quite essential.

A High Range voltmeter From A Milliameter

Scarcely a day goes by during which an amateur adjusting his transmitter desires to measure some potential difference but finds that the range of his instrument is to limited. Often it is a very easy matter to adjust the range of the instrument already possesed or change some low reading milliameter into a high reading voltmeter. (The instrument here discribed must not be used more than a fraction of a minute at a time on the higher voltages. The reading should be taken rapidly.) Suppose we have a ten M.A.D.C. milliameter and want to change it into a 1000 volt D.C. voltmeter? The resistance of the M.A. is negligible, therefore, the voltage drop in it when used as a 1000 volt voltmeter will be neglected. The 1000 volt drop across the meter must then be taken up in a suit-

Continued on page 14

Resistance Impedence Coupled Amplifier

By The Technical Editor

A rather interesting field of experimentation presents itself in the shape of amplifier circuits adopted for amateur use. The circuit here discussed is not so widely used and because of its good qualities, deserves some consideration. As is seen from Fig. 1C the amplifier is a combination of both the resistance coupled and impedence coupled types. It possesses the good qualities of the resistance coupled amplifier, in that it amplifies all audible frequencies in practically a constant ratio. It also possesses some of the good features of the impedence coupled amplifier because it provides a low resistance path for the "B" battery current and less "B" battery voltage is required than for the straight resistance coupled amplifier circuit.

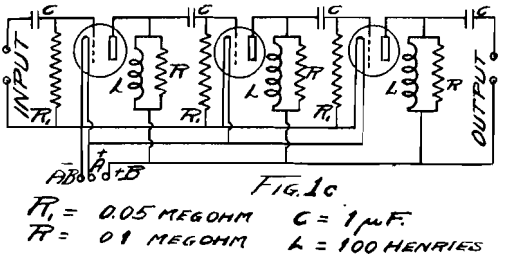


FIG. 1C

R_1 = 0.05 MEGOHM C = 1 μF.
R = 0.1 MEGOHM L = 100 HENRIES

Some Useful Information

An Up TO Date List Of International Intermediates

A—Australia
Au—Alaska
B—Belgium
BE—Bermuda
BZ—Brazil
C—Canada & New Brunswick
CH— chile
CR—Costa Rica
D—Denmark
E—Spain
F—France
FI—Indo China
G—Great Britain
H—Switzerland
HU—Hawaii
I—Italy
J—Japan
K—Germany
L—Luxembourg
M—Mexico
N—Netherlands
O—South Africa
P—Portugal
PI—Philippine's
PR—Porto Rico
Q—Cuba
R—Argentine
S—Scandinavia (Denmark, Finland, Iceland, Norway, Sweden)
U—United States
Y—Uruguay
Z—New Zealand

Signals designating relative— AUDIBILITY		READIBILITY
R-1	Faint signal, just audible.	1 - 10% "
R-2	Weak Signal, barely readable.	2 - 20% "
R-3	Weak signals, but readable.	3 - 30% "
R-4	Fair signals, easily readable.	4 - 40% "
R-5	Moderately strong signals.	5 - 50% "
R-6	Strong signals.	6 - 60% "
R-7	Cood strong signals.	7 - 70% "
R-8	Very strong signals.	8 - 80% "
R-9	Extremely strong signals.	9 - 90-100 "

(Example) R99 means extremely strong signal with 100% copy. R91 means extremly strong signal but only able to copy about 10% due to QRM, QRN, etc. R39 would mean weak signal but 100% copy, etc.

Wisconsin Traffic Reports.

Dist.1. Traffic total,305.				
Call	Orig.	Delv.	Rel.	Total
9DTK	85	31	78	194
9ATO	14	11	8	33
9BKR	24	0	0	24
9BTK	12	5	6	23
9BWO	2	7	2	11
9CIB	2	2	4	8
9VD	2	1	4	7
9CDT	1	1	1	3
9AFZ	2	0	0	2
Dist.2. Traffic total, 88.				
9EK	29	26	26	81
9BIB	1	2	2	5
9EAR	1	1	0	2
Dist.3. Traffic total,217.				
9DKS	101	41	20	162
9BZA	5	6	6	17
9AGV	7	0	8	15
9EMD	2	2	8	12
9AZY	4	1	0	5
9ANE	2	0	2	4
9CXK	2	0	0	2
9DKA	Incorrect.			
Dist.4. Traffic total, 66.				
9AZN	29	1	14	44
9BLF	11	4	5	20
9ZY	0	0	2	2
Totals.	338	142	196	676

District 1.

9DTK is giving 9CM at L'Anse Mich. the daily baseball scores. He is working on crystal control for his xmitter.

9ATO is doing good work in the Army Reserve traffic net. Old man Cary is back pounding brass at ATO.

9BKR thinks he will close down for the summer, needs rest, poor boy!

9BWO still operating on storage B's, calls them his Anti-Volsted-Supply, because they never go dry. (Howzat OM? VD.)

9CIB hopes to have crystal oscillating soon. Also expects to join the Naval Reserve as soon as he reaches 18.

9CDT has given up trying to work on 40 until he gets enuf ambish to climb around on the roof and put up a new antenna.

9AFZ has plenty of time, but spends most of it at Gimble Bros. (and the YL's.)

9EHM station under construction and expects to be going in a month.

9BTK been sick with the mumps, (too bad OM) says traffic slowing down and his station will be off the air for the summer.

9VD busts out on 39 and 78 occasionally and busts in at the neighboring BCL's-result: spontaneous combustion followed by absolute quiet. (Why don't u stand on ur prerogative OM?- Ed.)

District 2.

9EK-9XH operating with crystal control on 38.42 meters and on 40 with straight oscillator.

9BIB using crystal on 40.2 meters and says he dreams of the day when we will all be using crystal control.

9EAR operating on 38 meters and is building a short wave portable transmitter for summer use.

9COI is so busy at school he cant find time to pound brass.

9AZA wants it known that he is not dead but only dormant and is liable to wake up most any time now.

District 3.

9DKA must be busy this month.No station news at all.

9DKS is going in for crystal control. Has been trout fishing but no luck.

9BZA sends report only with no station news. Give us a story next time OM.

9AGV lays his low message total to poor conditions. It isn't so bad if the quality is good. (DS)

9EMD has all his equiptment for a 50 watter but his 4000-IS tubes. He will have all Pyrex insulated antenna and counterpoise. George will do schedule work with this new outfit. (What r 4000-IS tubes George? Ed.)

9AZY school work and track practicing have been interfering with AZY's duty at the key.

9ANE has joined the M.R.A.C. He has been appointed an ORS and is awaiting the return of his certificate.And is working both coasts.

9CXK is looking for stations to carry on schedules work during the Eagles Convention June 16 to 19th. Address H.J.Fisher 201 E.Mill St., Plymouth Wis.

9BVA spring fever has stopped operations at this station. We are wondering if wild women have anything to do with this.

9DCT , has just finished three months school for a commercial first grade license.Schroeder is not thru with the Ham game tho and expects to appear this winter with a HE outfit on ham waves.

District 4.

9AZN and 9ZY were appointed Army Amateur stations for LaCrosse and totals for these stations increased.9AZN keeps schedules now with 9BLF Sparta every noon and with Chicago evenings on 76 meters.

9ZY rebuilding transmitter now which was constructed for 200 meter work using quarter kilowat tube.

9BLF will handle all traffic from Camp Sparta to LaCrosse this summer using a badly overloaded UX210.

9DCX & 9EIK are also rebuilding and will be off the air for some time.

District 5.

9ELI was the only station reporting from this district this month. Says he has schedules with 9XI-9XM daily but gave no traffic totals.

The ADM would like to receive more reports,especially from the gang in the second district.

Traffic took an awful slump this month,but dont let that worry you, send in your,reports anyway, tho your totals are small. Wisconsin has lead the country several months this season,so lets all stick together fellows and see if we can't hold our position.

9VD.

Doings at the Clubs

The Milwaukee Radio Amateurs' Club

John M. Meyer Secretary

The Non-Resident membership of the club is increasing steadily. The club expects to soon have members in every state in the union. The interest in the Badger ARRL News and Non-Resident membership plan is not at all in accordance with the usual summer slump. We are hoping to have even more activity than ever during the coming summer.

A great deal of interest in crystal oscillators has been shown at the last few meetings of the club. Several members are experimenting and it is expected that Milwaukee will have a chorus of "crystal" notes by fall.

At a recent meeting a petition for the nomination of Mr. C.N. Crapo for S.C.M. was signed by all ARRL members present and sent in to headquarters.

A large part of all the recent meetings has been taken up by discussion of plans for the BADGER HAM ROUNDUP. Many helpful suggestions have been received. Reservations are coming in rapidly, predicting a large attendance.

We hope that all reservations for the roundup will be sent in promptly so that convenient arrangements can be made.

The LaCrosse Radio Association

A.D.Sanial Secretary

The Association planned another outing on the bluff above LaCrosse but again the weather conditions were unfavorable and will be postponed until Tuesday May 25th. The first Thursday selected for it was cold and rainy and Thursday the following week was worse as local thunderstorms happened in the afternoon and night. Lets hope the third time will be the charm, or 9AZN who is the local weather bureau man might come to harm.

The results of the tests made with extremely long antennas will be given later.

Chicago Radio Traffic Ass'n

R. T. Prazak Secretary

At the meeting of May 20th a representative of the Radio Supervisors office gave a talk on various topics of interest to amateurs. A short code practice using both slow and fast sending was also held.

At the meeting of June 3rd, Mr. C.A. Briggs, of 3CAB Washington D.C. will give an illustrated talk on Mercury Arc Rectifiers. He will also give a discription of the various amateur stations in Washn.

The Milwaukee Radio Amateurs' Club, Inc.

"RIGHT IN THE CENTER OF THINGS"

The Milwaukee Radio Amateurs' Club, Inc., was founded in January 1917, by a few Milwaukee amateurs, for the purpose of banding themselves together into a non-commercial organization which could champion their cause and provide means whereby their knowledge of radio, and allied subjects could be collectively increased.

In December, 1919, the club became affiliated with and now constitutes the Milwaukee chapter of the American Radio Relay League, Inc.

Membership appeals alike to the "DX" radio amateur, the radio experimenter, the novice, and the technically inclined broadcast listener. There are four grades of membership: namely, Regular, Associate, Junior and Non-Resident. Candidates for regular membership shall hold a U.S. radio operator's license of amateur or higher grade, and shall be at least 18 years of age. Candidates for associate membership shall be at least 18 years of age and shall have a bona fide interest in amateur radio. Junior membership is for candidates under 18 years of age, having a bona fide interest in amateur radio. The non-resident membership was established to give anyone living outside of Milwaukee County, with a bona fide interest in amateur radio activities a chance to become affiliated with a real live radio club.

Annual dues for the first two grades are five dollars, for Juniors, two and a half, and non-resident one dollar. The club publication "BADGER ARRL NEWS"is sent to all members free.

To those eligible, the direction of the club extends a perpetual invitation to apply for appropiate membership.

Application For Membership.

I hereby apply for_____(grade) membership in the Milwaukee Radio Amateurs' Club. I agree if admitted that I will at all times be governed by the constitution and by-laws of the club and by the rules and regulations of the A R R L.

Date_____ Name_____Call_____

Age_____ Address_____City_____

State_____Operators license number_____Grade_____

Are you a member of the A R R L?_____

A High Range Voltmeter From A Milliameter

(Concluded from page 8.)

able resistance which will necessarily be connected in series with the M.A. Let us connect one 100000 ohm lavite* or other compact resistance unit other than a receiving grid leak in series with the 10 milliamper meter. The voltage drop in this resistance when connected across any potential will be RI (resistance times current thru it) If this resistance is connected in series with the M.A. the whole is then connected across the plate supply of the transmitter a current of say 6.0 mills is indicated on the meter. The voltage drop in the resistance will then be 100000 times 0.006=600 volts and since the drop in the meter is negligible the plate voltage is equal to 600 volts.

If the accuracy of the resistance is doubted then it might be a good idea to try the voltmeter on the "B" batteries. This will give an approximate check if 2 new 45 volt blocks of batteries are available.

(Other instruments may be adapted for various uses and if enough interest is shown by the "Gang" a series of articles on range changing may be printed. Tech. Ed.

*A lavite unit should not be used for higher range voltmeters than 1000 volts unless the M.A. gives full scale deflection at less than 10 M.A.

Hamateur News

(concluded from page 4.)

P.S. Hendricks, ex3HY and former MRAC member is now in the BC business as operator of WMAK, Lockport NY. The WMAK gang also operate 8CQN.

-...-

O.C. Kent, 7HS and MRAC member is now on the air with a fiver at Glasgow Mont. Kent reports that he will be back at SOE, Milwaukee next winter to resume his engineering work for the N.P.RR.

-...-

Don Sibel who's left leg was reported as broken in our last issue, threatens to sue us for libel. He says it was his right leg. The only way out of it for us and to keep up our veracity, is to break his other leg.

At the last meeting of the MRAC a straw vote on the "Cable Count System" showed that most of the members had done a right about face regarding this system. At a previous meeting the sentiment seemed to be against it, but the vote, tho close, showed that the pseudo operators were in favor of it. The operators who really are on the air and seem to know conditions were not in favor of it, altho the club went on record as officially favoring the cable count.

In an interview after the meeting most of those voting for the cable count admitted to the writer that they personally would not use it. The editorial on page two of this issue therefore does not express the sentiment of the entire club, but only part of it.

F.C.

Classified Ham Ads.

Rates - 25¢ for the first line 15¢ per line for balance.

FOR SALE 1-203A Tube,1-300 Watt Acme filament transformer,1 double barrel 6 henry choke, 1-25 henry RCA choke, 1 Esco 500 watt 1500 volt motor generator,1-0 to 5 T.C. Ammeter, 1-0 to 1500 D.C. Voltmeter 1-0 to 20 A.C.Ammeter, 2-50 watt RCA tube sockets,1-5000 ohm RCA grid leak & other equipt ment. Write .....CARL HATCH 9BBY 2411 Meadow Lane,Manitowoc Wis.

FOR SALE one EDISON DICK model 77 hand power MIMEOGRAPH, complete with MIMEOSCOPE and TOOLS,all in first class shape. Write Box A. 711 Kenwood Blvd. Milwaukee Wis.

FOR SALE BARGAIN: WESTINGHOUSE MOTOR GENERATOR 100 WATT 500 VOLT GUARANTEED NEW FOR QUIGK SALE $35.00.....9AZN.

Wanted LARGE FILTER CHOKE 300 MA. What have you?.....9AFZ.

EXPERIMENTERS: Let us furnish you with calibrated resistances for your radio frequency measurements.
B.J.CHROMY 9CJO, 692 Cass St., Milwaukee Wis.

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LEO J. TOPOLINSKI 9DDG

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Milwaukee Wisconsin

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